

Remarks

Claims 1-11, 13, 27 and 28 are pending. Claim 28 is newly added. Claims 1-11, 13, and 27 are rejected. Claims 14-26 were previously withdrawn.

Support for the newly added claim 28 is found at least in claim 1 as pending prior to entry of the amendment by this communication. No new matter is introduced.

Rejections under 35 U.S.C. § 103(a)

Claims 1-8, 10 and 13 are rejected as being allegedly obvious over U.S. patent application publication No. 2002/0094440 by Llanos (“Llanos”) in view of U.S. patent application publication No. 2004/0072857 by Waugh et al. (“Waugh”) in further view of U.S. application publication No. 2004/0001889 by Chen et al. (“Chen”) as evidenced by Wikipedia. Applicants respectfully traverse these rejections.

To establish a *prima facie* case of obviousness of a claim drawn to a combination of elements, the PTO must provide evidence and well-grounded technical reasoning establishing that (1) every claim element is present in the prior art and (2) the claimed combination is a **predictable outcome** of the teachings of prior art (see, KSR v. Teleflex, 550 U.S. 398 (2007)). Applicants respectfully point out that the Examiner fails to establish a *prima facie* case of obviousness.

Llanos describes a copolymer formed of two moieties, the first moiety is either a vinylidene fluoride (VDF) or tetrafluoroethylene (TFE), and the second moiety is capable of copolymerize with the first moiety and imparts toughness or elasticity to the copolymer (paragraph [0010]). Llanos further provides that the second moiety can be hexafluoropropylene

(HFP), TFE, VDF, 1-hydropentafluoropropylene, perfluoro(methyl vinyl ether), chlorotrifluoroethylene (CTFE), pentafluoropropene, trifluoroethylene, hexafluoroacetone and hexafluoroisobutylene (paragraph [0020]). Therefore, as a person of ordinary skill in the art would recognize, **Llanos teaches a fluoro copolymer which is (1) hydrophobic and (2) non-degradable.**

Waugh describes attaching rapamycin to a polyamino acid (e.g., polylysine) or polyethylene glycol (paragraphs [0040]-[0050]). The Examiner painstakingly elaborates how Waugh would teach a ester-amide linkage (see pages 6 and 7 of the Office Action, the paragraph bridging page 6 and the whole page 7). However, suffice it to say, **a poly(ester amide) polymer has repeating ester-amide units in the backbone of the polymer,** and Waugh certainly fails to describe or teach such a polymer. A person of ordinary skill in the art would recognize that a polyamino acid includes peptide bonds (amide type bonds), but not ester amide bonds. **Applicants respectfully fail to see how Wikipedia, which shows the structure of lysine, a common amino acid, would be relevant and support the Examiner's reading of Waugh.**

Chen is provided to show the general state of the art. Applicants respectfully point out Chen is otherwise irrelevant to (1) the element of poly(ester amide) and (2) the issue of combination, indicated above.

To arrive at the claimed medical article based on the teachings of Llanos, Waugh, Chen and Wikipedia, a person of ordinary skill in the art has to (1) provide a biobeneficial polymer, which is hyaluronic acid, phosphoryl choline, poly(ethylene oxide-co-propylene oxide), polyaspirin, and poly(ester amide) polymers, (2) combine the biobeneficial polymer with the

polymer described in Llanos, and (3) attach a bioactive agent to the biobeneficial polymer. As discussed above, None of Llanos, Waugh, Chen and Wikipedia provide a biobeneficial polymer as defined by claims of the instant application. Further, the claimed combination is not a predictable outcome of the teachings of Llanos, Waugh, Chen and Wikipedia. A person of ordinary skill in the art would recognize, the biobeneficial polymer as defined in claims of the instant application are **either hydrophilic and/or biodegradable**. In contrast, fluoro polymers described by Llanos are **hydrophobic and no-degradable**. It is not all evident to a person of ordinary skill in the art that these two types of polymers can be **compatible so as to combine** to form a coating on a medical device, let alone to form a coating for controlling release of a bioactive agent, and thus, such a combination would not be a predictable conclusion from the teachings of these references to a person of ordinary skill in the art.

In sum, the Examiner fails to make a *prima facie* case of obviousness. Claims 1-8, 10 and 13 are therefore patentably allowable over Llanos in view of Waugh, Chen and Wikipedia under 35 U.S.C. §103(a).

Claims 9 and 11 are rejected as being allegedly obvious over Llanos in view of Waugh in further view of Chen, U.S. patent No. 6,703,040 to Katsarava et al. ("Katsarava") and U.S. patent No. 6,324,970 to Molnar-Kimber et al. ("Molbar-Kimber"), as evidenced by Wikipedia. Applicants respectfully traverse these rejections.

Llanos in view of Waugh, Chen and Wikipedia, which are discussed above, fail to provide (1) a poly(ester amide) polymer, the elected species, and (2) the claimed combination.

Katsarava describes a poly(ester amide) and teaches that such a poly(ester amide) polymer can be used to form a bioerodable coating on a supporting structure (col. 5, lines 1-3). Note, Katsarava teaches away from combining a poly(ester amide) polymer with a fluoro polymer in Llanos since all the fluoro polymers in Llanos are NON-ERODABLE.

Molbar-Kimber describes rapamycin conjugates where the rapamycin molecule is linked to a carrier via a linking moiety R^3-L-R^4 , R^3 being carbonyl, $-S(O)-$, $-S(O)_2-$, $-P(O)_2-$, $-P(O)(CH_3)-$, $-C(S)-$, or $-CH_2C(O)-$, and R^4 being carbonyl, $-NH-$, $-S-$, $-CH_2-$, or $-O-$ (cols. 2-4). Molbar-Mimber indicates that “the choice of the linking group L is not critical” to the invention described therein (col. 3, lines 31-35). Molbar-Kimber does not describe or teach linking rapamycin to a biobeneficial polymer as defined by claims of the instant application.

The Examiner admits Katsarava fails to provide a poly(ester amide) polymer having the structure as defined by claim 9. Nonetheless, the Examiner dismisses the difference between Katsarava and claim 9 on the ground that (1) the poly(ester amide) of claim 9 differs from the polymer of Katsarava in their respective linking groups and (2) Molbar-Kimber shows that a linking group is not critical (see Office Action, pages 13-15 in general; end sentence of page 15, the first paragraph). Applicants are concerned with the Examiner’s lacking appreciation of the difference between the polymer of claim 9 and that in Katsarava. The polymer of claim 9 has two types of repeating units M-P and M-Q whereas the polymer of Katsarava has only one type of repeating units. Further, Molbar-Kimber indicates that the linking group L is not critical to the invention described therein. How would such a statement lead the Examiner to the conclusion that the linking group in the present invention is not critical is beyond Applicants’

comprehension and understanding. In addition, the linking group in the polymer of claim 9 refers to those in the polymer backbone while the linking group of Molbar-Kimber refers to the linking group L in the linking moiety R^3-L-R^4 attaching rapamycin to a carrier. The linking group in claim 9 and the one in Molbar-Kimber refer to two entirely different chemical entity.

In sum, Katsarava and Molbar-Kimber fail to make up the deficiencies of Llanos, Waugh, Chen and Wikipedia with respect to claims 9 and 11. Further, **Katsarava teaches away from combining the poly(ester amide) polymer of Katsarava with the fluoro polymer of Llanos.** As such, claims 9 and 11 are patentably allowable over Llanos, Waugh, Chen and Wikipedia in further view of Katsarava in further view of Molber-Kimber under 35 U.S.C. §103(a).

Claim 27 is rejected as allegedly being obvious over Llanos in view of Waugh and U.S. patent No. 6,451,337, as evidenced by Wikipedia.

Llanos, Waugh, and Wikipedia are discussed above. Smith discloses a medical device including chitosan and a nitric oxide donor. Smith otherwise provides nothing to make up the deficiencies of Llanos, Waugh, Chen and Wikipedia with respect to claim 27. As such, the Examiner fails to make a *prima facie* case of obviousness of claim 27 over Llanos, Waugh, Chen, Smith and Wikipedia under 35 U.S.C. §103(a). Claim 27 is patentably allowable over these references.

Request for supervision of Examination

The present application was filed in 2003 and is pending for about 5 and 1/2 years. In the course of examination, **the Examiner made numerous rejections of the claims over about two dozen references.** Applicants overcame each of these references and filed an RCE on April 15,

2008. Yet, the Examiner continues to make rejections which sometimes are frivolous citing largely irrelevant references and/or are based on unfounded or erroneous readings of prior art references (see the discussions above, and Applicants' communication filed on September 29, 2008). **This causes a substantial burden on the Applicants and constitutes a significant waste of PTO's resource as well as resource of the Applicants.** Applicants therefore respectfully request that supervisory examiner(s) have a close supervision of the examination of the application. Applicants wish to point out that very fact that the Examiner cited many references yet these references fail to teach the claimed subject matter is itself an indication of non-obviousness of the claimed subject matter.

Conclusion

The present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. **07-1850**. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 07-1850. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. § 1.136 and authorize payment of any such extensions fees to Deposit Account No. **07-1850**.

Respectfully submitted,

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